CPE10C/FPE10C — PROFESSIONAL ENGLISH FOR PHYSICAL SCIENCES

Time : Three hours   Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL the questions.

1. Rearrange the given words in the proper order:

   prevent / treat / and / medication / to / used / a / HCQ / is / Malaria

2. Rearrange the given words in the proper order:

   had / toxicities /compound / significant / the

3. A process description describes how something works. True / False?

4. Role-play is a technique that allows students to explore realistic situations by interacting with others. True / False?

5. Write a sentence using the word: Congress.

6. Write a sentence using the word: Molecule.

7. The Sun won't ever become a black hole. True / False?

8. A phenomenon is a fact or an event in nature, which is not fully understood. True / False?

9. What is Semi Circle?

10. What is Data?

SECTION B — (5 × 5 = 25 marks)

Answer ALL the questions.

11. (a) Rearrange the given words in the proper order:

(i) additional / malaria / types / certain / of / requires / medication

(ii) bark / took / it / centuries / two / the / isolated / the for / from / bark / be / Quinine

(iii) include / effects / common / adverse / other / itching / headache / and

Or

(b) Here are some of the products that use artificial sweetener. Discuss their pros and cons.

12. (a) Write an extended definition for 'Drafting machine'.

Or

(b) Fill in the blanks with appropriate words given in the box:

Electronics; handhelds; consumption; light emitting; advantage The LED display is one of the main screen displays that are being commercially used. The biggest ———————— of the LED display is it is efficient ———————— and low-energy ————————, which is especially needed for and chargeable devices such as mobile phones and tablets. An LED display consists of many LED panels that, in turn, consist of several LEDs. LEDs have numerous advantages over other ———————— sources that can be used alternatively. Aside from being power efficient, LEDs produce more brilliance and greater light intensity. LED Display is different from the vacuum fluorescent display used in some consumer ———————— such as car stereos, video cassette recorders, etc., and, hence, these two should not be confused with each other.

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13. (a) Write sentence using the following words:
Urge; Mystery; Discovery.

Or

(b) Write a sentence using following words:
Congress; Molecule; Demonstrate.

14. (a) Match the following:

(i) Gravitational Lensing   Earth Function Properly

(ii) Thunderstorms   Electrical Discharges

(iii) Gravity   Manufacture in Transistor

(iv) Silicon   Earth was not the focal point of the Universe

(v) Copernicus   Diminish during the Overshadowing Phenomena

Or

(b) Write five sentences about the significance of Newton's theory in Physics.

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Commander Rick D. Husband

Pilot William C.McCool

Payload Commander Michael P. Anderson

Payload Specialist Ilan Ramon, the first Israeli astronaut

Mission Specialists David M. Brown and Laurel B. Clark.

20. Does 5G pose health risks? Write your views.

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The shuttle carried a number of experiments and observing tools on its trip, including a Spartan satellite, which Chawla deployed from the shuttle. The satellite, which studied the outer layer of the sun, malfunctioned due to software errors, and woot her astronauts from the shuttle had to perform a spacewalk to recapture it. In 2000, Chawla was selected for her second voyage into space, serving again as a mission specialist on STS-107. The mission was delayed several times, and finally launched in 2003. Over the course of the 16-day flight, the crew completed more than 80 experiments. On the morning of Feb. 1,2003, the space shuttle returned to Earth, intending to land at Kennedy Space Centre.

At launch, a briefcase-sized piece of insulation had broken off and damaged the thermal protection system of the shuttle's wing, the shield that protects it from heat during re-entry. As the shuttle passed through the atmosphere, hot gas streaming into the wing caused it to break up. The unstable craft rolled and bucked, pitching the astronauts about. Less than a minute passed before the ship depressurized, killing the crew. The shuttle broke up over Texas and Louisiana before plunging into the ground. The accident was the second major disaster for the space shuttle program, following the 1986 explosion of the shuttle Challenger. The entire crew of seven was killed. In addition to Chawla, the crew included:

15. (a) Read the text and fill in the gaps with the following words

Telescope; Steepness; Squares; length of the slope; Pythagorean theorem; Height; Hypotenuse; right angles.

The Pythagorean Theorem states that with a right-angled triangle, the sum of the —————— of the two sides that form the right angle is equal to the square of the third, long side, which is called the ——————.

One of the classic uses of the Pythagorean Theorem is in laying the foundations of buildings. To make a rectangular foundation, you need to make ——————. But how can you do that? When you have the length and width, you can use —————— it to make a precise right angle. A theorem is a great tool for solving distance between two points and creating symmetrical designs in games like Mine craft. It's also useful to cartographers, who use it to calculate the —————— of hills and mountains.
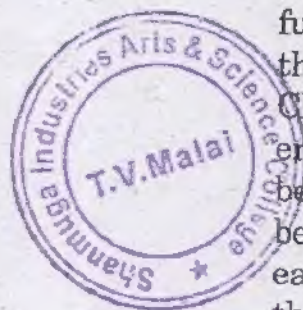
Or

(b) Read the following passage and answer as directed:

In many places in our planet, we experience severe disasters like earthquakes, tsunami, cyclone resulting in loss of life, loss of wealth and in some cases it destroys the decades of progress made by countries and their valuable civilizational heritage. India has earthquake problems periodically in certain regions. US, Japan, Turkey, Iran and many other countries also suffer due to earthquakes. Earthquake/tsunami is a sub terrain phenomenon and predicting this from space observations would be a great challenge. Space scientists of multiple nations should work together to use satellite deep penetration images to predict the earthquake or shock wave propagation. Other possibilities are precise geodynamic measurement of strain accumulation by satellite to detect pre-slip, and electromagnetic phenomena prior to final rupture. The focus must be on earth quake forecasting with adequate warning so that the people can move to safer areas. Space technology can also be used for forecasting and modelling of volcanic eruptions, landslides, avalanche, flash floods, storm surge, hurricane and tornadoes.

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19. Write a summary of the passage in about 50 to 60 words.

The tragic loss of the space shuttle Columbia killed seven astronauts. One of those, Kalpana Chawla, was the first Indian-born woman in space. Born in Karnal, India, on July 1, 1961, Chawla was the youngest of four children. The name Kalpana means "idea" or "imagination." Her full name is pronounced CULL-puh-na CHAVla, though she often went by the nickname K.C. Chawla obtained a degree in aeronautical engineering from Punjab Engineering College before immigrating to the United States and becoming a naturalized citizen in the 1980s. She earned a doctorate in aerospace engineering from the University of Coloradoin 1988, having previously obtained her masters degree from the University of Texas. She began working at NASA's Ames Research Center the same year, working on power lift computational fluid dynamics. In 1994, Chawla was selected as an astronaut candidate. After a year of training, she became a crew representative for the Astronaut Office EVA/Robotics and Computer Branches, where she worked with Robotic Situational Awareness Displays and tested software for the space shuttles. Chawla's first opportunity to fly in space came in November 1997, aboard the space shuttle Columbia on flight STS-87. The shuttle made 252 orbits of the Earth in just over two weeks.

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Artificial intelligence is based on the principle that human intelligence can be defined in a way that a machine can easily mimic it and execute tasks, from the most simple to those that are even more complex. The goals of artificial intelligence include learning, reasoning, and perception. The applications for artificial intelligence are endless. The technology can be applied to many different sectors and industries. AI is being tested and used in the healthcare industry for dosing drugs and different treatment in patients, and for surgical procedures in the operating room. Other examples of machines with artificial intelligence include computers that play chess and self-driving cars. Weak AI tends to be simple and single-task oriented, while strong AI carries on tasks that are more complex and human-like.

Questions:

(a) What are the goals of artificial intelligence?

(b) What is artificial intelligence based on?

(c) Which are the sectors that use AI in the present?

(d) Define weak and strong AI.

(e) Do you think it is a good idea to programme human intelligence in machines? If so, what are the traits that can be programmed?

Fill in the blanks.

(i) Earthquakes and tsunamis are _____ phenomena.

(ii) Space scientists should work _____.

(iii) The focus must be on earthquakes _____.

Give the synonym from the passage for the following words.

(1) Picture _____

(2) Predict _____.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Read the following passage and answer the questions:

Vaseline is a kind of petroleum jelly-based products. The products include plain petroleum jelly and many varieties of skin creams, soaps, lotions, cleansers, and deodorants. Petrolatum, or petroleum jelly, derived from petroleum is often used in personal care products as a moisturizing agent. In many languages, the word "Vaseline" is used as generic for petroleum jelly; in Portugal it is called as Vaselina, and in Brazil and some Spanish speaking countries, the products are called Vasenol.

In 1859, Robert Chesebrough went to the oil fields in Titusville, Pennsylvania, and learnt about a residue called "rodwax" that had to be periodically removed from oil rig pumps. The oil workers had been using the substance to heal cuts and burns. Chesebrough took samples of the rod wax back to Brooklyn, extracted the usable petroleum jelly, and began manufacturing a medicinal product called Vaseline.

The name Vaseline was first coined by Chesebrough and filed a U.S. patent (U.S. Patent 127, 568) in 1872. The name "vaseline" is said by the manufacturer to bederived from German *Wasser* "water" + Greek (*elaion*) "olive oil". Vaseline was made by the Chesebrough Manufacturing Company until the company was purchased by Unilever in 1987.

White petrolatum, the ingredient in petroleum jelly Vaseline, is refined from petroleum. Vaseline can be used as a lubricant, it can also be used as a moisture insulator for local skin conditions characterized by tissue dehydration. Vaseline has been reported to be highly refined, triple-purified and regardedas non-carcinogenic.

Say whether following sentences are True or False

(a) Vaseline is a moisturizing agent.

(b) The Rodwax is used to heal cuts and burns.

(c) Vaseline is a non-medicinal product.

(d) The name Vaseline is derived from water and olive oil.

(e) Vaseline is carcinogenic.

Complete the following passage choosing the right word given in brackets

Petroleum jelly is easy to find and ———————— (ineffective/inexpensive). It is chemically similar to skin ———————— (protein/vitamin). Dermatologist suggests it for ———————— (medicinal/non-medicinal) tips and tricks, It is used for the treatment of chapped lips, ————————(nails/cuticles), hands and feet.

17. Imagine yourself as a student of Computer Science, and you attend a Lab class, and you discuss the use of learning computer graphics and cryptography with your friends.

18. Read the following passage and answer the questions:

Artificial intelligence (AI) refers to the simulation of human intelligence in machines that are programmed to think like humans and mimic their actions. The term may also be applied to any machine that exhibits traits associated with a human mind such as learning and problem-solving. The ideal characteristic of artificial intelligence is its ability to rationalize and take actions that have the best chance of achieving a specific goal. When most people hear the term artificial intelligence, the first thing they usually think of is robots. That is because big-budget films and novels weave stories about human-like machines that wreak havoc on Earth.